



AMES RESEARCH CENTER

National Aeronautics and Space Administration

Ames Research Center, Moffett Field, California 94035-1000

415-604-9000

80- by 120- Foot Wind Tunnel

80x120

Primary Use:

The facility is used primarily for large-scale or full-scale testing of aircraft and rotorcraft including high-lift development for subsonic transports, V/STOL powered lift, high angle-of-attack for fighter aircraft and propulsion systems.

Capability:

- Mach Number: 0-0.15
- Reynolds Number per foot: 1.1 X10⁶
- Stagnation Pressure: Atmospheric
- Temperature Range: 485°-580° R
- Indraft, continuous flow, closed throat wind tunnel.
- Model support systems available include a 3 strut arrangement with a nose or tail variable height strut, a sting and a parafoil mount.
- The entire model support can be yawed a total of 360°.
- Six components of force and moment are measured by the mechanical, external balance under the test section or by internal strain-gage balances in the sting or rotor testbeds.
- Test section is lined with an 8" acoustic lining.
- Model utilities include temperature controlled 3000 psi air, 3000 psi hydraulics, jet fuel, cooling water, 24V DC aircraft power and 400 cycle and 150 cycle variable frequency power.
- Data system
 - Data are acquired through an open architecture system based on the VMEbus, using Pacific and Precision Filter conditioning units.
 - Analog input data can be recorded on 400 channels with a maximum total sampling rate of

10,000,000 samples per second.

- Some Real-time processing can be performed through an SGI 4D/440 computer.
- Pressures can be recorded using Pressure Systems Incorporated (PSI) equipment.
- Digital data can be recorded on an additional 20 channels utilizing an RS-485 interface.
- Main computations are performed on a SGI Crimson computer.

Status:

- **Originally Built** - 1982
- **Major Mods** - None
- **Current Status** - Undergoing modification of fan drive and model support control systems.
- **Future Status** - Operational: April, 1997

Utilization:

- **Who/How Much** - Estimated; industry and cooperative research 50%, other government agencies 25%, NASA 25%
- **User Fees** - T.B D.
- **Legislated Restrictions** - None. National facility available to industry, DOD and NASA development and research.

Capital Value:

Replacement Cost: \$168 Million.

For further information, contact

NASA Ames Research Center

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